AMENDMENTS TO THE CLAIMS

All claims currently pending and under consideration in the present application are shown below. This listing of claims will replace all prior versions, and listings, of claims in the application and is presented here for convenience of the Examiner:

Listing of Claims:

1. – 84. (Cancelled).

85. (Currently Amended) One or more computer storage media having computer-executable instructions embodied thereon that, when executed, perform a method for processing hereditary data related to the use of clinical agents by a person, the method comprising the steps of:

displaying a graphical user interface (GUI) that is configured to solicit input from a clinician to ascertain whether to authorize performing a genetic test on a ~~patient~~ when a genetic test result is unavailable for the person~~, wherein the GUI displays fields that reveal an identification of the person and an identification of the genetic test to be performed, that is configured to receive authorization from the clinician to carry out the genetic test, and that is configured to receive result value of the genetic test for the person upon carrying out the genetic test~~;

~~when the genetic test result is unavailable and~~ when ~~personal~~ demographic information about the person is accessible, performing the steps comprising:

(a) utilizing the ~~personal~~ demographic information ~~about~~ of the person for calculating a first likelihood that the person displays genetic variability linked with genes associated with the genetic test~~, wherein the personal information includes one or more demographic factors~~; and

(b) displaying a notification window in the GUI that solicits authorization from the clinician to carry out the genetic test, wherein the notification window presents the first likelihood that the person displays genetic variability linked with genes;

~~when the genetic test result is unavailable and~~ when the ~~personal~~ demographic information about the person is inaccessible, performing the steps comprising:

(a) utilizing genetic variability of a general population for calculating a second likelihood that the person displays genetic variability linked with genes associated with the genetic test; and

(b) displaying the notification window in the GUI that solicits authorization from the clinician to carry out the genetic test, wherein the notification window presents the second likelihood that the person displays genetic variability linked with genes; and

when the genetic test result is ~~available~~ determined upon conducting the genetic test, using the genetic test result to identify ~~determine a severity of each~~ one or more risk-associated agents via a process comprising: ~~atypical event that could occur upon the person using the clinical agents~~;

~~showing in the notification window in the GUI generating a GUI that shows to the clinician risk information comprising the likelihood of genetic variability and the atypical event severity associated with the genetic variability;~~

(a) querying a computerized table listing polymorphism values ~~and~~ with the genetic test result ~~atypical clinical events~~ to identify associated ~~with the~~ polymorphism values;

(b) ~~determining if~~ when the genetic test result is associated with a polymorphism value ~~associated with~~ related to an atypical clinical event, ~~and if so,~~ accessing a list of risk-associated agents that cause the atypical clinical event in a person expressing the polymorphism value; and

(c) outputting ~~an interpretation of the genetic test result value and~~ the list of risk-associated agents and~~, wherein outputting includes~~ automatically ordering follow-up tests~~, automatically scheduling counseling for the person, and automatically storing the interpretation in the person's electronic medical record~~.

86. (Previously Presented) The computer storage media of claim 85, further comprising the step of determining if the person has been exposed to an agent on the list of risk-associated agents.

87. (Currently Amended) The computer storage media of claim 86, wherein the step of determining if the person has been exposed includes accessing an electronic medical record of the person, wherein ~~the heredity data~~ demographic information and the electronic medical record are accessible and updatable by a healthcare system~~, and wherein updating comprises integrating the heredity data with newfound knowledge associating the heredity data with the risk-associated clinical agents~~.

88. (Previously Presented) The computer storage media of claim 87, wherein the electronic medical record is stored within a comprehensive healthcare system.

89. (Previously Presented) The computer storage media of claim 86, further comprising the step of initiating a clinical action if the person has been exposed to an agent on the list of risk-associated agents.

90. (Cancelled).

91. (Currently Amended) A computer-implemented method for processing hereditary data related to the use of clinical agents by a person, comprising the steps of:

receiving a genetic test result value for the person;

querying a computerized table listing with the genetic test result value, wherein the computerized table listing includes polymorphism values and atypical clinical events associated with the polymorphism values, and wherein the computerized table is stored on a processing unit;

utilizing the processing unit to determine ~~if~~ whether the genetic test result value ~~is~~ indicates a polymorphism value associated with an atypical clinical event, and, if so, accessing a list of risk-associated agents that cause the atypical clinical event in a person expressing the polymorphism value;

outputting ~~an interpretation~~ a representation at a graphical user interface (GUI) of the genetic test result value and the list of risk-associated agents~~, wherein the interpretation indicates that the person has a genetic predisposition to agents on the list of risk-associated agents that causes one or more atypical reactions for the person~~;

when the person has been exposed to one or more of ~~the~~ agents on the list of risk-associated agents, automatically ascertaining whether to ~~automatically~~ generate a low-risk clinical response or a high-risk clinical response based on

whether a dosage of the one or more agents exceeds a predetermined dangerous level;

when the person has been exposed to a dosage of the one or more agents on the list of risk-associated agents that is above the predetermined dangerous level, automatically generating the high-risk clinical response that includes performing the actions comprising:

(a) reducing the dosage of the agent to an amount below the predetermined dangerous level; and

(b) placing an alternative order for an agent that is absent from the list of risk-associated agents; and

otherwise, automatically generating the low-risk clinical response that includes performing the actions comprising:

(a) adding a comment to the person's electronic medical record indicating that no risks were determined from the genetic test result value; and

(b) outputting an interpretation at the GUI of the low-risk clinical response, wherein the interpretation indicates the genetic test result value is not associated with any know risks.

92. (Currently Amended) The method of claim [[25]]91, further comprising the steps of:

accessing the person's demographic information stored in the electronic medical record;

utilizing the demographic information in cooperation with the computerized table listing ~~polymorphism values and atypical clinical events associated with the polymorphism values~~ to determine a likelihood of a genetic variation existing in the person and a severity of an atypical event associated with the genetic variation; and

displaying the GUI based on determined likelihood and severity.

93. (Currently Amended) The method of claim 91, further comprising the steps of:

determining that the person has not had a genetic test performed; and

producing a warning to the clinician to suspend use of the clinical agents on the person pending results from the genetic test[[;]]

~~determining whether to request authorization from a clinician in accordance with a cost of the genetic test and a likelihood of a genetic variation based on demographic information of the patient;~~

~~when the determination indicates not to request authorization, automatically ordering the genetic test; and~~

~~when the determination indicates to request authorization, allowing the clinician to order the genetic test in a field of an ordering window~~.

94. (New) A computer-readable medium containing instructions for controlling a computer system for displaying a warning that a clinical agent received from a clinician should not be administered to a person by a method comprising:

receiving from a clinician clinical agent information, the clinical agent information including an identifier of a specific clinical agent;

determining if a gene is associated with the clinical agent by comparing the identifier of the clinical agent received from the clinician to a first data set containing agent-gene association;

when a gene is associated with the clinical agent, attempting to obtain a genetic test result value for the associated gene of the person by accessing patient information within an electronic medical record (EMR) of the person, wherein the EMR is stored within a comprehensive healthcare system;

when the genetic test result value is obtained from the EMR, comparing the genetic test result value to a second data set containing one or more polymorphism values associated with one or more atypical clinical events for the clinical agent;

determining whether the genetic test result value correlates to one or more of the one or more polymorphism values contained in the second data when the genetic test result value correlates to one or more of the one or more polymorphism values, displaying a warning to the clinician that the clinical agent received from the clinician should not be administered;

when the genetic test result value cannot be obtained from the EMR, calculating the likelihood that the person displays a genetic mutation linked to the gene associated with the clinical agent, wherein calculating the likelihood of the linked genetic mutation comprises:

(a) when demographic information about the patient is available in the EMR, using the demographic information to determine genetic variability of the gene within the person and basing the genetic-mutation likelihood upon the determined genetic variability; and

(b) when demographic information about the patient is unavailable from the EMR, basing the genetic-mutation likelihood upon the genetic variability of the gene within the general population; and

constructing a message to communicate the calculated likelihood of the genetic mutation and any atypical clinical events that are associated therewith, wherein the message is utilized by the clinician to ascertain whether to order a test to obtain the genetic test result value.

95. (New) The computer-readable medium of claim 94, wherein the clinical agent information includes a dosage of the identified clinical agent, wherein the second data set includes information about risks associated with various dosages of the identified clinical agent.

96. (New) The computer-readable medium of claim 94, wherein the clinical agent information is received over a communication network from a remote computer.

97. (New) The computer-readable medium of claim 94, wherein the step of determining if a gene is associated with the clinical agent includes querying the first data set containing agent-gene associations and determining whether the gene has one or more variants associated with an atypical response to the identified clinical agent.

98. (New) The computer-readable medium of claim 97, further comprising the step of initiating an alternative clinical action when the gene has one or more variants associated with an atypical response to the identified clinical agent information.

99. (New) The computer-readable medium of claim 98, wherein the alternative clinical action includes at least one of ordering additional tests for the person, automatically canceling one or more previously ordered clinical actions, or generating a message warning of a patient-specific risk.

100. (New) The computer-readable medium of claim 94, attempting to obtain a genetic test result value comprises obtaining the genetic test result value from an electronic medical record of the person stored within a comprehensive healthcare system.

101. (New) The computer-readable medium of clam 94, wherein the second data set includes information about risks associated with the atypical clinical event.

102. (New) The computer-readable medium of claim 101, the method further comprising the step of accessing the risk information in the second data set.

103. (New) The computer-readable medium of claim 35, the method further comprising the step of outputting information that the person is not at risk when the genetic test result value does not correlate to a polymorphism value.